

CLAIMS

1. A polishing apparatus comprising:

5 a substrate holding device configured to hold a substrate on a substrate holding surface; and

a substrate relay device configured to deliver the substrate to said substrate holding device and receive the substrate from said substrate holding device, said substrate relay device including:

10 a substrate placement section having a substrate placement surface on which the substrate is placed;

a moving mechanism configured to vertically move said substrate placement section; and

a high-pressure fluid port configured to eject a high-pressure fluid toward the substrate.

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2. The polishing apparatus as recited in claim 1, wherein said high-pressure fluid port is configured to eject the high-pressure fluid between said substrate holding surface of said substrate holding device and the substrate to separate the substrate from said substrate holding surface of said substrate holding device.

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3. The polishing apparatus as recited in claim 1, wherein said substrate relay device further includes a cover provided around said high-pressure fluid port to prevent the high-pressure fluid from scattering around said high-pressure fluid port.

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4. A polishing apparatus comprising:

a substrate holding device configured to hold a substrate on a substrate holding surface; and

5 a substrate relay device configured to deliver the substrate to said substrate holding device and receive the substrate from said substrate holding device, said substrate relay device including:

a substrate placement section having a substrate placement surface on which the substrate is placed;

10 a moving mechanism configured to vertically move said substrate placement section; and

a fluid supply passage configured to supply a fluid onto said substrate placement surface of said substrate placement section so as to form a fluid film on said substrate placement surface of said substrate placement section.

15 5. The polishing apparatus as recited in claim 4, wherein said fluid supply passage is configured to form the fluid film on said substrate placement surface of said substrate placement section so that the substrate is attracted to said substrate placement surface by the fluid film when the substrate is transferred between said substrate holding device and said substrate relay device.

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6. The polishing apparatus as recited in claim 5, wherein said fluid supply passage is configured to supply the fluid onto said substrate placement surface of said substrate placement section to separate the substrate from the substrate placement surface after the substrate has been transferred from said substrate holding device to said substrate relay device.

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7. A polishing apparatus comprising:

a substrate holding device configured to hold a substrate on a substrate holding surface; and

5 a substrate relay device configured to deliver the substrate to said substrate holding device and receive the substrate from said substrate holding device, said substrate relay device including:

a substrate placement section having an attraction section on which the substrate is placed, said attraction section including an elastic body defining a fluid chamber;

10 a moving mechanism configured to vertically move said substrate placement section; and

a passage connecting said fluid chamber of said attraction section to at least one of a fluid supply source and a vacuum source.

15 8. The polishing apparatus as recited in claim 7, wherein said attraction section further includes an attraction section body having a chamber surface, said fluid chamber being defined by said chamber surface of said attraction section body and said elastic body.

20 9. The polishing apparatus as recited in claim 8, wherein said attraction section body has a recessed surface as said chamber surface.

10. The polishing apparatus as recited in claim 7, wherein said attraction section is operable to attract the substrate by evacuating said fluid chamber through
25 said passage when the substrate is transferred between said substrate holding device and said substrate relay device.

11. The polishing apparatus as recited in claim 10, wherein said attraction section is operable to separate the substrate from said attraction section by
30 supplying a fluid from said fluid supply source through said passage after the substrate has been transferred from said substrate holding device to said substrate relay device.

12. A polishing apparatus comprising:

a substrate holding device configured to hold a substrate on a substrate holding surface; and

5 a substrate relay device configured to deliver the substrate to said substrate holding device and receive the substrate from said substrate holding device, said substrate relay device including:

a substrate placement section having a substrate placement surface on which the substrate is placed;

10 a moving mechanism configured to vertically move said substrate placement section; and

a chucking mechanism which is brought into contact with a peripheral portion of the substrate.

13. The polishing apparatus as recited in claim 12, wherein said chucking mechanism includes a link configured to be introduced between said substrate holding surface of said substrate holding device and the substrate.

14. The polishing apparatus as recited in claim 12, wherein said chucking mechanism includes a link configured to hold a peripheral edge of the substrate.

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15. A polishing apparatus comprising:

a substrate holding device configured to hold a substrate on a substrate holding surface; and

25 a substrate relay device configured to deliver the substrate to said substrate holding device and receive the substrate from said substrate holding device, said substrate relay device including:

a substrate placement section having a substrate placement surface on which the substrate is placed;

30 a moving mechanism configured to vertically move said substrate placement section; and

a tub configured to immerse said substrate placement section and the substrate held by said substrate holding device in a liquid.

16. The polishing apparatus as recited in any one of claims 1 through 15,
wherein said substrate holding device has a passage configured to supply a
pressurized fluid from said substrate holding surface to the substrate when the
substrate is transferred from said substrate holding device to said substrate relay
5 device.

17. The polishing apparatus as recited in any one of claims 1 through 15,
wherein said substrate holding device includes:

an elastic pad having the substrate holding surface, said elastic pad
10 including an opening connected to at least one of a fluid supply source and a
vacuum source;

a support member configured to support said elastic pad; and

a substrate holding device body having a space to accommodate said elastic
pad and said support member.

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18. The polishing apparatus as recited in claim 17, wherein said substrate
holding device further includes:

an abutment member attached to said support member, said abutment
member having an elastic membrane brought into contact with said elastic pad;

20 a first pressure chamber defined between said substrate holding device
body and said support member;

a second pressure chamber defined outside of said abutment member
between said elastic pad and said support member; and

a third pressure chamber defined inside of said abutment member;

25 wherein said first pressure chamber, said second pressure chamber, and
said third pressure chamber are independently connected to said at least one of a
fluid supply source and a vacuum source.